REMARKS

By the above amendment, the previous considered claims have been canceled without prejudice or disclaimer of the subject matter thereof, and new claims 21 - 38, reciting further features of the present invention, have been presented, wherein claim 21 is the only independent claims in this application.

In accordance with the present invention, as illustrated in Fig. 11 of the drawings of this application and as now recited in the newly presented claims, a semiconductor processing apparatus includes a chamber in which a sample wafer as a processing object is processed, first and second data storing devices represented by the storage devices 22a and 22b which receive and store process data from the chamber which is generated during processing of at least the sample wafer, which process data includes data concerning emission light generated within the chamber during the processing. As recited in independent claim 21 and the dependent claims, the semiconductor processing apparatus includes a selecting device, as represented by the device 23, for example, which selectively sends the process data to one of the first and second data storing devices 22a and 22b in accordance with a predetermined condition. More particularly, the selecting device sends the process to one of the first and second data storing devices until an amount of the process data which has been sent to and stored in the one of the first and second data storing devices reaches a predetermined amount as the predetermined condition, and thereafter sends the process data of a succeeding process to the other of the first and second data storing devices. In this manner, the process data thus stored in each of the data storing devices is treated as a unit of the process data, and subsequently, the unit of the process data which is stored is read out from the data storing device and analyzed, so that the accuracy of the analysis can be improved

and the data can be managed easily. For example, a unit of data according to the predetermined condition (such as the process data of a predetermined date and a time period, the predetermined at least one lot of wafers) is stored in the data storing devices which stored the unit of process data is thereafter read and analyzed, as recited in the dependent claims of this application.

Applicants note with the present invention, as recited in the claims, the collected data can be managed easily. For example, a unit of data relating to the wafer processing performed as to the predetermined time period or at least a predetermined lot is stored in one of the data storing devices. Thus, the unit of data thus stored is read out and analyzed, whereby it is possible to extract information such a feature which is common to the processing and which influences the semiconductor processing. Further, in the case of storing of the data into another data storing device, it is also possible to store the data as a unit of process data. The unit of process data thus stored in the data storing device is read out and then analyzed. This is because, since an amount of data including data concerning emission light generated within the chamber during the processing is very large, it is efficient to once store a unit of the process data in the data storing device without analyzing the process data and then to perform analysis of the data after reading out from the data storing device.

Additionally, the storing of process data on a certain unit basis in the data storing device brings the following merit. That is, if the process data is continued to be stored in one of the data storing devices without changing into another data storing device when an amount of data having been stored satisfies a predetermined condition such as a predetermined amount, it is required to change the data storing device from one to another in accordance with the wafer processing or the

processing of a certain lot. In this manner, a unit of data is separately stored in the plural data storing devices.

In this case, at the time of reading the unit of data which has been separately stored in the plurality of the data storing devices, if process data is being sent to and stored in another of the plurality of the data storing devices, the reading of the unit of process data from the another of the plurality of the data storing devices is suspended until the completion of the data storing therein. Similarly, at the time of storing the unit of data in the plurality of the data storing devices, if process data is being read from another of the plurality of the data storing devices, the storing of the unit of process data into the another of the plurality of the data storing devices is suspended until the completion of the data reading therefrom. As a result, the processing efficiency is degraded. According to the present invention, such a problem of a conventional technique can be eliminated, in that the process data is stored in one data storing device while the stored process data for analyzing is read out from the other data storing devices, as recited in the claims of this application. Applicants submit that the features, as now recited in the independent and dependent claims, are not disclosed or taught in the cited art as will become clear from the following discussion.

The rejection of claims 11 - 17 and 20 under 35 USC 102(b) as being anticipated by Ino et al (JP 2000-180127) or alternatively under 35 USC 102(e) as being anticipated by Ino et al (US Patent Publication 2002/0066859), such rejections are considered to be obviated by the cancellation of the aforementioned claims and such rejections are traversed insofar as they are applicable to the newly presented claims.

As to the requirements to support a rejection under 35 USC 102, reference is made to the decision of In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 U.S.C. §102 requires that each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

In applying Ino et al to the claimed invention, the Examiner contends that this document discloses a semiconductor processing apparatus comprising the chamber to process the sample wafer (Fig. 31), first data storing device (542), a second data storing device (543) each receiving and storing data from the chamber during processing (paragraph 207), selecting device which selects the data received by the storage devices (550) and data analyzing device (550) capable of diagnostics. Further, the Examiner contends as both memory locations (storage devices) can independently store or retrieve data they could be used simultaneously to store or read (paragraphs 208 and 213) and attached to detached (using or releasing memory). Applicants submit that the Examiner has mischaracterized the disclosure of Ino et al. More particularly, paragraph [0207] of Ino et al indicates that the memory section 540 includes a reference waveform memory section 541 for storing

a waveform of the light split from the light radiated from the wafer, a first memory section 542 storing a first database, a second memory section 543 storing a second database. As described in paragraph [0209] the first database as illustrated in Fig. 32 and the second database as illustrated in Fig. 33 are stored in advance in the first memory section 542 and the second memory section 543, respectively. Paragraphs [0206] and [0208] indicates that an arithmetic section 550 which is connected to the measuring section 534 and the memory section 540 performs arithmetic operations which include a first arithmetic section 551 for calculating the thickness of the underlying film on the basis of the measured sample radiation waveform obtained in the measuring section 534 and the first database stored in the first memory section 542, and a second arithmetic section 552 for calculating peak wavelength on the basis of the waveform obtained in the measuring section 534 and the database stored in the second memory section, which is the memory section 543. Irrespective of the Examiner's contentions, that the first data storing device 542 and the second data storing device 543 each receive and store data from the chamber during processing, applicants submit that as clearly described in this publication, the data stored in memory sections 542 and 543 is data stored in advance, such that applicants submit that Ino et al does not operate in the manner contended by the Examiner. Additionally, applicants submit that while the Examiner refers to a selecting device in terms of reference numeral 550, and a data analyzing device in terms of reference numeral 550, it is readily apparent that 550 is an arithmetic section operating on the stored information and the received information, in the manner set forth, and does not select a memory section to receive and store data from the measuring chamber, as claimed. Furthermore, applicants submit that not only does Ino et al fail to provide a selecting device, Ino et al fails to provide a

selecting device operating in the manner set forth in claim 21 and the dependent claims. As such, applicants submit that claim 21 and the dependent claims patentably distinguish over Ino et al in the sense of 35 USC 102 and 35 USC 103 and such claims should be considered allowable thereover.

Applicants further note that the data stored in the storage devices or memory section in Ino et al and referred to by the Examiner as 542 and 543, is not analyzed or processed, but merely used as reference data for comparison or arithmetic operations. In contrast, as described in the specification of this application, since an amount of data including data concerning emission light generated within the chamber during the processing is very large, it is efficient to once store a unit of the process data in the data storing device without analyzing the process data and then to analyze the data after reading out from the data storing device. Further, by selectively storing the process data in one data storing device and then another data storing device, efficient operation is obtainable and the storing of processed data on a certain unit basis in the data storing device provides the advantages as described, and such features are set forth in the dependent claims of this application. Additionally, irrespective of the Examiner's comments concerning the storage or retrieval of data simultaneously or independently and that the storage devices are configured to be detachable, applicants submit that such features are not disclosed or taught in Ino et al. The aforementioned features are set forth in the independent and dependent claims of this application and applicants submit that such features patentably distinguish over the cited art in the sense of 35 USC 102 and 35 USC 103, such that all claims present in this application should be considered allowable thereover.

In view of the above amendments and remarks, applicants submit that all claims present in this application should now be in condition for allowance and issuance of an action of favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 500.41371VX1), and please credit any excess fees to such deposit account.

Respectfully submitted,

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